PROCEEDINGS
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THE 2ND ANNUAL INTERNATIONAL SEMINAR ON TRANSFORMATIVE EDUCATION AND EDUCATIONAL LEADERSHIP

Educational Research to Endorse Productive and Innovative Generation in the 21st Century

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October 16-17, 2017

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Preface

The 2nd Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL with web link is http://aisteel2017.unimed.ac.id/) was held on October 16 -17, 2017 in Medan City, Indonesia. This conference was organized by Postgraduate School, State University of Medan (Unimed) and is the routine agenda at Unimed now. The Second Annual International Seminar on Transformative Education and Educational Leadership’ is realized this year with various presenters, researchers, lecturers and students from universities both in and out of North Sumatera participate in the theme of which is “Educational Research to Endorse Productive and Innovative Generation in the 21st Century.”

2nd AISTEEL is the annual international seminar with main aim is to discuss of recent research special for Transformative Education and Education Leadership. Several topics like: Teachers Education Model, Research Global Issue in Education, Mathematics and Science Education, Social, Language Education, Vocational Education, Curriculum, Economic, History and Management Education have been discussed at the 2nd AISTEEL 2017. 2nd AISTEEL international seminar provided experts’ view on transformative education and educational leadership as well as curriculum article presentation. There were five keynote speakers have been came Professor Keiichiro Yoshinaga, Dr. Bambang Sumintono, Dr. Sitti Maesuri Patahuddin, and Dr. Yulia Rahmawaty. The organizer had been use online submission system to receive all abstract, full paper and also communication with authors. All of information include with comment of reviewer can be checked real time by author.

Chairperson

Dr. Rahmad Husein, M.Ed
Welcoming Speech of Director of Postgraduate School State University of Medan

The Second Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL)

The honorable,
- Rector of State University of Medan, Prof. Dr. Syawal Gultom, M.Pd.
- Vice Rectors of UNIMED
- Professor Keiichiro Yoshinaga, PhD, Institute of Liberal Arts and Science, Kanazawa University – Japan
- Dr. Bambang Sumintono, M.Ed., University Malaya – Malaysia
- Dr. Sitti Maesuri Patahuddin, Faculty of Education, Science, Technology and Mathematics, University of Canberra – Australia
- Yuli Rahmawati, Chemistry Education Program, Universitas Negeri Jakarta
- Deans of Faculties of Education, Languages and Arts, Social Sciences, Natural Sciences and Mathematics, Engineering, Sports Sciences, and Economics
- Vice Directors of Postgraduate School of UNIMED
- All speakers, lecturers, researchers, students, and participants

Good Morning
Welcome the honorable guests speakers Professor Keiichiro Yoshinaga, Dr. Bambang Sumintono, Dr. Sitti Maesuri Patahuddin, Assoc. Prof. Emilia Zulmira de FAN, and other speakers, lecturers and students from outside and inside Unimed to this international seminar which is the routine agenda at Postgraduate program of Unimed now. I’m glad that ‘The Second Annual International Seminar on Transformative Education and Educational Leadership’ is realized this year with various presenters, lecturers and students from universities both in and out of North Sumatera and participate in the theme of which is “Educational Research to Endorse Productive and Innovative Generation in the 21st Century.”

Ladies and Gentlemen,
In this second seminar excels the first one related to the administration by online and the publication index by either Thomson Reuters or Google Scholar. By the new policy on student’s publication, postgraduate program really matches the system, particularly for the students who will sit in the oral defence examination. Through the seminar, the postgraduate students improve their article journal writing and it is proved by many articles are submitted by the students.

The plenary speakers coming from 15 provinces in Indonesia will present topics covering multi disciplines. They will contribute a lot of inspiring inputs and new knowledge on current trending educational research topics all over the world. The expectation is that all potential lecturers will share their research findings to educational scientists and researchers as well for improving their teaching process and quality. Thus, this will contribute to the next young generation researchers to produce innovative research findings in education and educational leadership contexts.

This second seminar continues the promotion of the first sequel ‘Developing Future Teachers’ Education Model. Therefore, the propose of this second seminar on the transformative education and educational leadership research will trigger the young professional lecturers and educators to compete in the invention of innovative educational teaching and learning strategies, techniques and leadership.

I hope that the scientific attitude and skills through research will promote Unimed to be a well-known university which persists to be developed and excelled in the future.

Thank you the Rector of Unimed who always supports us in organizing the seminar. Thank you all guest and plenary speakers. Special thanks to both steering and organizing committee who have well-coordinated and collaborated in actualizing the seminar.

Director of Postgraduate Unimed

Prof. Dr. Bornok Sinaga, M.Pd
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Effect of Using Collaborative Learning Strategy on The Student’s Achievement in Writing Descriptive Text</td>
<td>1</td>
</tr>
<tr>
<td>Nursyah Handayani</td>
<td></td>
</tr>
<tr>
<td>The Development of Multicultural Based Teaching Materials on the Observation Report Text for Senior High School Student</td>
<td>5</td>
</tr>
<tr>
<td>Nurhasanah Permata Sari Sembiring, Khairil Ansari, Mutsuyhito Solin</td>
<td></td>
</tr>
<tr>
<td>The Power Behind Advertisement</td>
<td>10</td>
</tr>
<tr>
<td>Endang Larasati</td>
<td></td>
</tr>
<tr>
<td>The Effect of Using Audio Visual Media on Student’s Vocabulary Mastery</td>
<td>13</td>
</tr>
<tr>
<td>Resti Citra Dewi</td>
<td></td>
</tr>
<tr>
<td>Ideational Taxonomic Relation of Hata Pangupa in Tapanuli Selatan Wedding Ceremony</td>
<td>17</td>
</tr>
<tr>
<td>Mutia Nasution</td>
<td></td>
</tr>
<tr>
<td>Pal’s Leadership Style and Teacher’s Performance of Islamic Junior High State School (MTsN) Hamparan Perak Deliserdang Distric</td>
<td>21</td>
</tr>
<tr>
<td>Nurmal, Maria Ulfa Handayani, Denny Khairani, Desi Prawita</td>
<td></td>
</tr>
<tr>
<td>The Influence of Work Motivation on Teacher’s Job Performance of Vocational High School in Medan</td>
<td>24</td>
</tr>
<tr>
<td>Darmawati, Sri Melfayetti, Selamat Triono Ahmad</td>
<td></td>
</tr>
<tr>
<td>Error Analysis by Using Tenses of Senior High School</td>
<td>28</td>
</tr>
<tr>
<td>Hariyanto</td>
<td></td>
</tr>
<tr>
<td>The Traditional Custom and Ceremonial Tradition in Suku Anak Dalam Language</td>
<td>32</td>
</tr>
<tr>
<td>Putri Ayu Lestari</td>
<td></td>
</tr>
<tr>
<td>The Impact of Internet Marketing on Success of Women Micro, Small and Medium Enterprises Innovation as Intervening Variable</td>
<td>36</td>
</tr>
<tr>
<td>Fivi Rahmatus Sofiyah, Ami Dilham</td>
<td></td>
</tr>
<tr>
<td>The Effect of Cooperative Integrated Reading and Composition (CIRC) Technique on Students Reading Comprehension</td>
<td>40</td>
</tr>
<tr>
<td>Linda Efrina Nasution</td>
<td></td>
</tr>
<tr>
<td>Translation Shifts in Translating Didong from Gayonese in to Bahasa Indonesia</td>
<td>44</td>
</tr>
<tr>
<td>Wike Yurida</td>
<td></td>
</tr>
<tr>
<td>The Effect of Team Assisted Individualization (TAI) Strategy on Student’s Reading Comprehension</td>
<td>48</td>
</tr>
<tr>
<td>Khairuni Syafitri</td>
<td></td>
</tr>
<tr>
<td>The Effect of Organizational Culture on Working Disciplines of Madrasah Ibtidaiyah Head Master in Deliserdang</td>
<td>53</td>
</tr>
<tr>
<td>Muhammad Ritai, Syanaruddin Siahaan, Simon Nurhadi</td>
<td></td>
</tr>
<tr>
<td>Student’s Achievement on Reading Comprehension in Narrative Text by Using Think Pair Share Technique (TPS) at SMPN 1 Lubuk Pakam</td>
<td>58</td>
</tr>
<tr>
<td>Eprima Lestari Hutabarat</td>
<td></td>
</tr>
<tr>
<td>Ideational Taxonomic Relations of Hobar on Parpokatan Orja of South Tapanuli</td>
<td>63</td>
</tr>
<tr>
<td>Novria Grahmuyanuri</td>
<td></td>
</tr>
<tr>
<td>The Effect of Using Task Based Learning Method on the Student’s Achievement in Reading Comprehension</td>
<td>69</td>
</tr>
<tr>
<td>Nilam Ulami Siregar</td>
<td></td>
</tr>
<tr>
<td>Relationship of Initiation Structure and Consideration with Effectiveness Leadership</td>
<td>72</td>
</tr>
<tr>
<td>Wanti Simanjuntak, Syaiful Sagala</td>
<td></td>
</tr>
<tr>
<td>The Effect of Storytelling Method on Students Writing Narrative Text Ability at the Eleventh Grade Students of MAN Panyabungan</td>
<td>77</td>
</tr>
<tr>
<td>Armita Novriiana Rambe</td>
<td></td>
</tr>
</tbody>
</table>

iv
The Implementation of Curriculum 2013 in Vocational High School 4 Takengon
Zainal Arifin, Herbert C.B. Manalu, Rini Deliana, Fitri Ariyanti

80

The Difference of Mathematical Problem Solving Ability by Using Student Teams Achievement
Division (STAD) and Direct Instruction on System Linear Equation Two Variable in Grade VIII
SMP Negeri 11 Medan
Faradilla Bafaqih, Cecep Nandar

84

The Influence of Problem-Based Learning and Every One is A Teacher Here Models on Higher
Order Thinking Skills in Environmental Pollution Topics
Kurnia Putra, Hasruddin, Ahmad Rafiqi Tantawi

89

The Effect of Applying Task Based Learning (TBL) Approach on The Student’s Ability in Writing
Descriptive Paragraph
Vijay Khana

94

Teacher’s Language Style in English Course Class
Dyan Yosephin Hutagalung

98

Differences Between Students Mark Taught With Co-Operative Learning Model Type TGT With
Guess The Words Media Compared With Students Mark Taught With Co-Operative Learning
Models With Words Square Media in Hydrocarbon Subject
Haruni Siregar, Gulmah Sugiharti

101

Language Used by Male and Female of Darul Ilmi Murni
Syakri Hidayati

107

The Use of Journal Writing in Improving Student’s Writing Skill of Recount Text
Muhammad Ilham Adha

110

Teacher and Student Perceptions Toward Practical Implementation Obstacles at Learning Chemistry
Sepra Pajar, Ramlan Silaban, Zainuddin Muchtar

114

The Analysis of the Implementation and Problems of Lab Work on Chemistry Learning
Elvira Lastri, Iis Siti Jahro, Marham Sitorus

120

The Implementation of Using Library Card and ICT Based Library Service System in Increasing
Reading Interest of Primary School Students at Tanjung Gading of Batu Bara Regency
Suci Amalia, Asih Menanti

125

Project Based Learning Tools Development on Alcohol and Ether Materials at Natural Science
Faculty State University of Medan
Nadia Armina Ramad, Jamalum Purba

132

The Development of Teaching Material to Write Explanation Text Based on Mind Map
Pienti Mala Ningsih Manalu, Biner Ambarita, Rosmawaty Harahap

138

Improvement of Student Learning Outcome Using Model of Collaborative Based Lesson Study with
Student’s Worksheet on Materials Hydrolisis
Agus Muliaman, Laila Majnun Hutaagool

141

The Application of Comic Learning Media to Improve Student’s Achievement on Reduction and
Oxidation Reaction Topic
Anggi Desviana Siregar, Rini, Herdini

146

The Application of Cooperative Learning Round Robin to Improves Student Learning Achievement
on the Subject of Electrolyte-Nonelectrolyte and Redoxin Class X SMAN 1 Seberida
Nora Santi, Betty Holiwarni, Johni Azmi

150

The Effect of Combination Cooperative Learning Models Toward Learning Result
Sapnita Idamarna Daulay

154

The Maintenance of Hokkien Among Chinese Speakers in Stabat
Widya Ningsih

159

Effect of Blended Learning Model and Learning Style to Civic Education Learning Results in Class
VII in Junior High School Panca Budi Medan
Madina Qudsia Labis, Reh Bungana Br.Perangin-angin, Mursid

164

EFL Student’s Uses of Um as Fillers in Speaking
Eka Riana

169
The Influence of Role Playing Method and Self Concept of Social Skills of 5-6 Years Old Child.................................. 172
Rabiah Hanum Hasibuan, Anita Yoe, Yusnadi

The Effect of Learning Approach and Personality Type Towards Learning Outcomes............................................. 178
Dwoy Dinda Sari, Julaga Situmorang, Busmin Gurning

The Effect of Learning Models and Critical Thinking Skills on Social Science Learning Outcomes..... 183
Juriah Siregar, Julaga Situmorang,Baharuddin

The Effect of Suggested Method on Student’s Achievement in Vocabulary.......................................................... 188
Heppy Yersin Digiwa Purba

Application of Active Learning Strategy Type Everyone is A Teacher Here (ETH) to Increase Student Activity and Learning Outcomes in Chemistry on Salt Hydrolysis.......................................................... 193
Wilda Fajrina, Darra Utari Ningsih, Sri Adelila Sari, Habibati

The Effect of Learning Strategy and Type of Personality on Student’s Achievement in Economic Science.......................................................... 198
Dewi Shara Dalimunthe

Development of Learning Tools Based on Realistic Mathematics Education of Ethnomathematics Nuances to Improve Mathematical Communication Skill Students in Junior High School 2 Percut Seiutuan.......................................................... 202
Rizqi Jamiah, Edi Syaiful, Kms, M. Amin Fauzi

The Impact of Cooperative Learning Strategy and Learning Interest Toward the Learning Result of Second Year of Senior High School Students in 2016/2017.......................................................... 208
Riswan Sianturi, Abdul Muin Sibuea, Edward Purba

The Development of Flash Program as a Media of Chemistry Learning on Chemical Equilibrium...... 210
Lenni Khotimah Harahap, Albinus Silalahi, Iis Siti Jahro

The Ethnic Mandailing Tradition of Courtship (Markusip) and Revitalization Efforts in the Formation of the Character Youth.......................................................... 214
Riadi Syafutri Siregar, Ratih Baiduri, Robert Sibaran

The Effect of Education on Unemployment Rate in Indonesia.......................................................... 218
Rahmat Putra Ahmad Hasibuan, Dede Ruslan, Fitrawaty

Development of Explanatory Text Materials Based on Problem Solving in Senior High School Pematangsiantar.......................................................... 222
Tiarma Nova Intan Malasari, Biner Ambarita, Malan Lubis

Learning Model of Strengthening Vocational Life Skills With Entrepreneurship Knowledge to Improve Student Learning Outcomes.......................................................... 226
Husni Wardi Tanjung

A Critical Discourse Analysis Wardah Halal Beauty Advertisements.......................................................... 229
Ayu Lestari Siregar, Mei Lastri E.F. Butar-Butar

Influence of Creative Problem Solving (CPS) Mathematics Learning Model to Mathematical Problem Solving and Self Efficacy Students of SMA Negeri 3 Binjai.......................................................... 232
Nurcahaya Hatuotso, Martua Manullang, Ani Minarni

Differences in Mathematics Problems Solving Students With Implementing Learning Model Think Pair Square and Group Investigation in Junior High Schools.......................................................... 236
Abdul Halim, Edy Surya

The Acquisition of Nouns and Verbs of Mandailingnese by Two-Year-Old Mandailing Children........... 240
Marwah, Amrin Saragih, Sri Mindata Murdi

Utilization of ICT Learning in Senior High School Teladan Medan.......................................................... 244
Tengku Salwa Miranti

The Effect of Cooperative Learning Model Based Interactive Media and Interpersonal Communication on Student’s Achievement.......................................................... 248
Catur Ayu Wialandari, Efendi Napitupulu, Keysar Panjaitan

Developing of Learning Material Based on Problem Based Learning to Increase Student’s Mathematical Reasoning Ability and Self-Efficacy in Grade X SMA Negeri 1 Medan.......................................................... 253
Anggi Paramita Daulay, Dian Armanto, Wamintong R
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efforts to in Crease A Motivation to Learning Math Using “Program” Learning Model</td>
<td>257</td>
</tr>
<tr>
<td>Linda Sari, Edi Syahputra</td>
<td></td>
</tr>
<tr>
<td>The Eford of Improving Mathematics Learning Outcome on Quadrilateral and Triangle Matter by Using Gradually Exsercise Strategy with The Assistance of Image Media</td>
<td>261</td>
</tr>
<tr>
<td>Ady Putra, KMS. Muhammad Amin Fauzi, Yulita Molqi</td>
<td></td>
</tr>
<tr>
<td>The Difference on Students’ Mathematical Creative Thinking Ability Between Realistic Approach with Conventional in The State Madrasah Tsanawiyah 2 of Medan</td>
<td>264</td>
</tr>
<tr>
<td>Siska Lestari, Zul Amry, Hasratuddin</td>
<td></td>
</tr>
<tr>
<td>Developing Learning Materials Using Realistic Mathematics Education to Increase Junior High School Students’ Mathematical Disposition and Connection Ability</td>
<td>269</td>
</tr>
<tr>
<td>Syu’aida Hazar Nasution, Izwita Dewi, E. Elvis Napitupulu</td>
<td></td>
</tr>
<tr>
<td>Developing Learning Materials Using Problem Based Learning to Increase Senior High School Student’s Mathematical Disposition and Representation Ability</td>
<td>275</td>
</tr>
<tr>
<td>Dewi Khairani, Mulyono, Izwita Dewi</td>
<td></td>
</tr>
<tr>
<td>The Effect of Question Students Have Strategy on The Result of Students Learning in Mathematics</td>
<td>281</td>
</tr>
<tr>
<td>Yuliani Aruan, Edi Syahputra</td>
<td></td>
</tr>
<tr>
<td>Analysis of Academic Supervision Competence and Managerial Supervision in Improving the Performance of Vocational High School Supervisors in Langsa City</td>
<td>284</td>
</tr>
<tr>
<td>Muhammad Hendra, Saut Purba, Mian Siahaan</td>
<td></td>
</tr>
<tr>
<td>The Use in Active Learning Strategy of Learning Starts with a Question Type in the Mathematics Learning</td>
<td>289</td>
</tr>
<tr>
<td>Jeni Putria Efif, Ani Minami, Pardomuan Sitompul</td>
<td></td>
</tr>
<tr>
<td>Improving the Ability to Learn Math by Using Rubu ’al-Mujayyab Media</td>
<td>293</td>
</tr>
<tr>
<td>Muhammad Hidayat, Edi Syahputra, E. Elvis Napitupulu</td>
<td></td>
</tr>
<tr>
<td>The Impact of Education Cost and Government Spending the Interest Rate of Bank Indonesia Subtitle</td>
<td>297</td>
</tr>
<tr>
<td>Julika Rahma Siagian, Dede Ruslan, Arwansyah</td>
<td></td>
</tr>
<tr>
<td>The Implementation of Problem Based Learning Models to Improve Mathematical Problem Solving Ability of Students on Arithmetic Materials in Class VII Junior High School</td>
<td>301</td>
</tr>
<tr>
<td>Elidar Tanjung, Izwita Dewi, Mulyono</td>
<td></td>
</tr>
<tr>
<td>The Effect of Learning Strategies to Trial By Jury in Participiont Mathematics Learning Student of Junior High School</td>
<td>305</td>
</tr>
<tr>
<td>Rizka Patriyah, Ani Minami, Zul Amry</td>
<td></td>
</tr>
<tr>
<td>The Differences Between The Effect of Realistic Mathematics Learning Approach to Conventional Learning with The Students Mathematics Learning Outcomes in Junior High School of 38 Medan Grade VII</td>
<td>309</td>
</tr>
<tr>
<td>Diyah Ari Sapatri, Syafari</td>
<td></td>
</tr>
<tr>
<td>The Effect of Value National Exam Standards at Learning Achievement of Students at Senior High School</td>
<td>312</td>
</tr>
<tr>
<td>Nuridiana Fahmi, Bornok Sinaga, W. Rajagukguk</td>
<td></td>
</tr>
<tr>
<td>The Effect of Open Unemployment Rate and Level of Vocational High Education to Poverty in North Sumatera Province</td>
<td>315</td>
</tr>
<tr>
<td>Zulaili, Indra Maipita</td>
<td></td>
</tr>
<tr>
<td>The Application of Cooperative Learning of Think-Pair-Share (TPS) Type to Increase the Students’ Ability of Problem-Solving</td>
<td>320</td>
</tr>
<tr>
<td>Mudriqah Fadhilah Siregar, Zul Amry, Syafari</td>
<td></td>
</tr>
<tr>
<td>The Relationship Between Metacognitive With the Results of Learning Outcomes on the Fungi Topic.</td>
<td>324</td>
</tr>
<tr>
<td>Elizabeth, Herbert Sipahutar, Syahmi Edi</td>
<td></td>
</tr>
<tr>
<td>Comparison of DNA Isolation Methods from Economically Valuable Plants in Indonesia</td>
<td>327</td>
</tr>
<tr>
<td>Chairiyani Rizka, Faiziyah Harahap, Syahmi Edi</td>
<td></td>
</tr>
<tr>
<td>Development of Learning Device Based on Realistic Approach to Improve Problem Solving Ability Mathematic of Student at Junior High School</td>
<td>333</td>
</tr>
<tr>
<td>Susanna Romaria Harahap</td>
<td></td>
</tr>
</tbody>
</table>
Efforts to Improve Understanding and Use Concept of Additive Fractions and Reduction Using Media Comics on Model Cooperative Learning Type Student Team Achievement Division (STAD) .......... 339
Ratu Natalia Perangin-angin, Sahat Siiahaan

The Effect of Cooperative Learning Type Games Teams Tournament (TGT) of Mathematics Learning Outcomes in the Fractions Matter .......................................................................................... 342
Ansori Hasibuan, Asmin Panjaitan, Asrin Lubis

Development of Authentic Mathematics Assessment in Application of Problem Based Learning Model to Improve Problem Solving Ability and Understanding of Student Mathematics Concept at Namorambe Secondary Private Middle School Junior High .... 347
Kartika Sari, Asmin, Bornok Sinaga

The Increasing of Student’s Mathematics Problem Solving Ability and Learning Motivation Through Problem Based Learning Model ............................................................................... 351
Ridha Maulida

Dialect of Batakinese Language Used by Senior High School Students’ .......................................................................................................................... 358
Rafika Nur Rahman

The Effectiveness of Tandur Method of Improving Students’ Learning Ability in Junior High School .......................................................................................................................... 362
Rahmatul Islam Elmujahidah, Mulyono, H. Banjarnahor

The Effect of Reciprocal Teaching Approach to Student Achievement on Ecosystem Topic in Junior High School ............................................................................................................. 365
Nilawati, Nurtika Dewi

Improvement of Student Learning Result by Using Cooperative Learning Model of Teams Games Tournament Type on Algebra Fuction Limit .................................................................................. 367
Rismalyah Manalu, E. Elvis Napitupulu, Martua Manullang

Noun Phrase of Culture Articles in The Jakarta Post .......................................................................................................................................................................................... 371
Misidiana

Application of Cooperative Learning Model Type Think Pair Share for Improved Communication .......................................................................................................................... 374
Nurhasanah

Implementation Model of School Policy in Constructing Behavior of Troubled Students .......................................................................................................................... 378
Khairtati Purnama Nasution, H. Syaiful Sagala

Efforts to Improving Creativity and Mathematics Learning Outcomes of Students With SPLET Strategy ...................................................................................................................... 382
Antoni

The Influence of Physical Education in Establishment of Self Esteem .......................................................................................................................... 386
Yustinus Tarigan, Tarasy Nugraha

The Improvement of Dance Art Learning Achievement for Deaf Students Through Total Communication Application (Gesture/Signal) in Sekolah Luar Biasa (SLB) - E Negeri Pembina Tingkat Provinsi Sumatera Utara ...................................................................................................................... 390
Siti Maryam

Innovation of Media Video Compact Disc Instructional Pencak Silat for High School .......................................................................................................................... 393
Marli Perangin-angin, Imran Akhmad, Agung Sunarno

Achievement Strategy of the Indonesian National Qualification Framework Based Curriculum Generic Description of Sport Education Postgraduate Program Universitas Negeri Medan .......................................................................................................................... 397
Muhammad Supriadi Siregar, Nurhayati Simatupang, Albadi Sininggga

The Effect of Teaching Styles and Motor Ability as The Result of Study Dribbling Football .......................................................................................................................... 401
Muhammad Fajar Doli Siregar

Semantic Analysis of English Loan Words in Indonesian Electronic Paper (Analisa) .......................................................................................................................... 404
Putri Nurul Rahmadani Siregar

Analysis of Empowerment of Competence Sinergy on Optimization of Education System .......................................................................................................................... 408
Rameyanti Tampubolon

Inquiry-Based Video Learning Media For Overcoming Student Learning Difficulty (Case Study at State Junior High School 3 Lubuk Pakam Deliserdang District) .......................................................................................................................... 412
Megawati
The Development of Mathematics learning Tool Oriented on Problem Based Learning to Enhance Mathematics Problem Solving Ability and Self Efficacy

Solawati Nainggolan, Mulyono, Hasratuddin

The Effectiveness of Contextual Inquiry-Based Worksheet on the Matter of Fungi on Food Towards Students’ Higher-Order Thinking and Science Process Skills of Biology Education

Nurjamiah Siregar, Hasruddin, Syahmi Edi

The Function of Limits Mastery on Mathematics Learning Achievement in Derivative Subject at the Eleventh Grade of Madrasah Aliyah Yayasan Pendidikan Karya Setia Padangsidimpuan

Hasna Dewi Ritonga

Effect of Education Level, Income, Inflation on Community Consumption Pattern in North Sumatera Province

Nelly Hutajulu, Fitrawaty, M. Fitri Rahmadana

Application of Problem Based Learning Model Assisted by Cabri Software to Improve Problem Solving Ability of Mathematics Students

Ahmad Darmawan, Edi Syahputra, Kms. M. Amin Fauzi

Optimization of Academic Supervision Competence of High School Supervisor in Karo Regency with Critical Events Model (CEM)

Karyawan Keliat, Yasaratodo Wau, Irsan

The Concept of Physics Learning Media Based Computer Animation

Ratna Tanjung, Mukhtar, Efendi Napitupulu

Cultivating Children’s Critical Attitude with Educational Philosophy

Daulat Saragi
Development of Explanatory Text Materials Based on Problem Solving in Senior High School

Pematangsiantar

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Abstract—Problem solving method is not just a teaching method but also a method of thinking, because in problem solving can use other methods starting with looking for data to draw conclusions. The development of this problem solving text-based explanatory learning module is structured pro grammatically in a systematic order and meets the characteristics to support students in learning. This study aims to find out product development in the form of explanatory text learning module based on problem solving for senior high school students. The last test subject of two Indonesian subject matter experts, two design instructional experts, three students for individual testing, nine students for small group test and thirty-two students for field test. The data on the quality of this development product is collected by questionnaire which shows the test of material experts with very good category, excellent design test experts, excellent quality individual test, excellent small group test and the final assessment of field test with excellent quality, test results the effectiveness of students learning to use learning-based module of problem solving is shown by the result of data processing obtained by t-test. Thus, the development of instructional materials in the form of learning modules on explanatory text learning is very feasible, easy and effective to used on explanation text learning in senior high school.

Keywords: problem solving, module, development

I. INTRODUCTION

Teaching materials is one source of learning is very instrumental in the learning process. This is expressed by Prastowo (2015), which concludes that teaching materials are all materials (information, tools, and text) systematically arranged, showing the complete figure of competence to be mastered by learners and used in the learning process with the aim planning and review of learning implementation. The development of teaching materials needs to be done in an effort to improve learning outcomes and establish the material based on the context of the situation in the school. These teaching materials have a function to help learners in obtaining alternative teaching materials other than textbooks, and facilitate teachers in implementing learning. But the reality in the field, the teacher has not been creative in developing teaching materials. The teaching materials used in schools still have some drawbacks and weaknesses. Teaching materials presented by teachers are still not as relevant to the needs of learners. [3]

Development of teaching materials of explanatory text is expected to help develop the thoughts, opinions, imagination, and creativity of the students so that students are able to understand the structure of explanatory text in accordance with the surrounding environment. Factors that cause the learning material explanation text conducted by teachers in the classroom is still less interesting and monotonous is the teacher still using conventional materials that are oriented on the results of students, not on the learning process so that students are only given theories of writing and forced to understand the material, while still there are students who have not understood about the material of explanatory text and its concept. The accuracy of teachers in choosing, applying and developing teaching materials used in
explanatory text materials greatly affect the learning process, but in this case the teacher is still not quite right.

This is reinforced by the observations and interview conducted by researchers at school. Based on the results of interviews with two Indonesian language teachers at senior high school Pematangsiantar, namely Susy Amny Magdalena, S. Pd., And Mrs. Sorta Manurung, S. Pd., Obtained information that teaching materials used by teachers have not been developed so that learning for the material explanatory text has not been maximized and has not reached all KD. It can be seen on the average score of learning result of Indonesian language learning which is still under KKM, as in the 2015 learning year.

Based on the theory, the development of teaching materials in the form of explanatory text module with problem-solving based is needed to support students in improving knowledge in explanatory text material. This module is also needed to support the progress of student learning outcomes in explanatory text material. The module is also developed with problem-solving methods, this method will serve as the color and characteristic of the module developed and make the module increasingly attract students' attention. According to (Gagne in Mulyasa, 2005) if a learner is confronted with a problem, in the end they are not just solving problems, but also learning something new [2]. Problem solving plays an important role both in science and in many other disciplines, especially for flexible learning. (Depdiknas, 2008) mentions: problem solving method is not just a teaching method but also a method of thinking, because in problem solving can use other methods starting with finding data to draw conclusions. [1]

II. RESEARCH METHODS

The type of this research is research development (Research and Development) that is development of writing text writing materials explanation-based problem-solving method for high school grade XI. According Sugiyono (2016), research and development methods are research methods used to produce a specific product and test the effectiveness of the product [5]. This research and development refers to the theory of teaching materials developed by Borg and Gall. The steps of development research according to Borg and Gall can be seen in the following diagram: [6]

This research was conducted on the students of class IX of senior high school 2 Pematang Siantar located at Patuan Anggi streets number 8, Suka Dame, North Siantar Subdistrict, Pematang Siantar City, North Sumatera. The developed teaching material was analyzed using the validation of the materials expert team and the instructional material design and the assessment using a rubric developed by the researcher by modifying the expert's opinion. The material criteria are based on the criteria of conformity of explanatory text materials based on problem solving methods and are based on revised 2013 syllabus curriculum 2016.

Design of explanation module based on problem solving can be seen in the following chart:
Instruments used in this study to collect data are grouped into 2 kinds, namely:

1. Instrument validation team of experts on learning materials writing explanatory text-based troubleshooting methods.
   a. The questionnaire validation sheet of the subject matter material
   b. Questionnaire design validation master of the questionnaire

2. Instrument responses of students and teachers on teaching materials
   a. Individual trial 3 people
   b. Trial of small group of 9 people
   c. Field trials are limited to 32 people
   d. Response Indonesian teacher 2 people

Data analysis techniques conducted in this development study is this data collected through expert validation, questionnaire distributed to students. Assessment instruments for validations and individual trials, small groups and limited field groups are created in the likert scale that has been scored as in the table below.

Table 3.5 Criteria Answers Instrument Validation Item with Likert Scale

<table>
<thead>
<tr>
<th>No.</th>
<th>Answer</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very Good</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Good</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Not Good</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Poorly</td>
<td>1</td>
</tr>
</tbody>
</table>

(Sugiyono, 2016: 93)[5]

Then the data is analyzed descriptively quantitative, that is calculated percentage of indicator for each category on instructional material developed.

\[
\text{\% skor} = \frac{\text{number of indicators per category}}{\text{the number of indicators of all categories}} \times 100\%
\]

Based on the calculation of the formula above, the figure is generated in percent. The classification of the score is then changed to classification in the form of percentage (Sugiyono, 2011: 118), then interpreted with qualitative sentences. [4]

III. RESEARCH RESULT

Based on the formulation, objectives, results and discussion of teaching materials development research in the form of explanatory text learning module based on problem solving proposed.

Based on the formulation, objectives, results and discussion of teaching materials development research in the form of explanatory text learning module based on problem solving previously mentioned, it can be concluded discussion and research results as follows. At the beginning of the study will spread questionnaire needs analysis to 34 respondents, consisting of 32 students and 2 teachers.

Based on the data needs analysis by students obtained the following conclusions:

1. All teachers and students (100%) said they were familiar with the explanatory text module based on problem solving.
2. All teachers and students (100%) stated that they do not use learning-based explanatory text module based on problem solving in the learning process and never use the media.
3. All teachers and students (100%) stated needing explanatory text learning module based on problem solving.

The validation result from the material expert, in the form of scoring score on learning component of explanatory text based on problem solving, can be known through the assessment done by the material expert from the quality aspect of the learning module that includes the quality of the content feasibility, feasibility of presentation, language feasibility, and feasibility based on method problem solving is rated "excellent" with the percentage of scores for validation scores from material experts is 95.08%.

The validation results of the design experts, in the form of scoring scores on the learning component of explanatory text based on problem solving, can be known through the appraisal done by the design expert from the quality aspect of the learning module that the aspect of the feasibility of grading is considered "excellent" with the percentage of scores for the validation score from design expert is 86.96%.

The validation result from the material expert, in the form of scoring score on learning component of explanatory text based on problem solving, can be known through the assessment done by the material expert from the quality aspect of the learning module which includes the quality of the content feasibility, feasibility of presentation, language feasibility, and feasibility based on method problem solving is rated "excellent" with the percentage of scores for validation scores from material experts is 95.08%.

The validation results of the design experts, in the form of scoring scores on the learning component of explanatory text based on problem solving, can be known through the appraisal done by the design expert from the quality aspect of the learning module which that the aspect of the feasibility of the grading is considered "excellent" with the percentage of scores for the validation score from design expert is 86.96%.

Very good quality individual test (94.76%), very good small group test (97.64%) and last assessment of field test with excellent quality (96.20%), result of effectively test to student studying using learning based module problem solving is indicated by the results of data processing obtained value "t", then matched with the table at a significant level of 5% = 1.66. This proves that t count < t table is 1.66 <4.07. Thus, it is concluded that the development of instructional materials in the form of learning modules on explanatory text learning is very feasible, easy and effective to used on learning text explanation in high school class XI.
IV. CONCLUSION

Teaching materials is one source of learning is very instrumental in the learning process. The development of teaching materials needs to be done in an effort to improve learning outcomes and establish the material based on the context of the situation in the school. Teaching materials have a very important position in learning, namely as a representation of the teacher's explanation in front of the class. Factors that cause the learning material explanation text conducted by teachers in the classroom is still less interesting and monotonous is the teacher still using conventional materials that are oriented on the results of students, not on the learning process so that students are only given theories of writing and forced to understand the material, while still there are students who have not understood about the material of explanatory text and its concept. The accuracy of teachers in choosing, applying and developing teaching materials used in explanatory text materials greatly affect the learning process, but in this case the teacher is still not quite right.

Based on the theory, the development of teaching materials in the form of explanatory text module with problem-solving based is needed to support students in improving knowledge in explanatory text material. This module is also needed to support the progress of student learning outcomes in explanatory text material. The module is also developed with problem-solving methods, this method will serve as the color and characteristic of the module developed and make the module increasingly attract students' attention. Problem solving plays an important role both in science and in many other disciplines, especially for flexible learning.

The development of this learning module is a programmable development in a systematic sequence and meets the characteristics to support students in learning. The last test subject of two Indonesian subject matter experts, two design instructional experts, three students for individual testing, nine students for small group test and thirty-two students for field test. Data about the quality of this development product were collected by questionnaire with the result of the research showed that the experimental material was very good (95.08%), the test of the excellent category learning to design expert (86.96%), the excellent quality individual test (94.76%), very good small group test (97.64%) and last assessment of field test with very good quality (96.20%), result of effectively test to student learning to use problem-based learning module is shown with result of data processing obtained value "t", then matched with table at significant level 5% = 1.66. This proves that t count< t table is 1.66 <4.07. Thus, it was concluded that the development of teaching materials in the form of learning modules on learning text of class XI high school explanation.

REFERENCES